

## 22 Descent with Modification

**ESSENTIAL QUESTION:** *Why are some species successful while others are not?*

### Vocabulary:

Natural selection/artificial selection

Population/species

Lamarck/Malthus

Index fossils/radioactive isotopes

Homologous structures/analogous structures/vestigial organs/Homoplasy

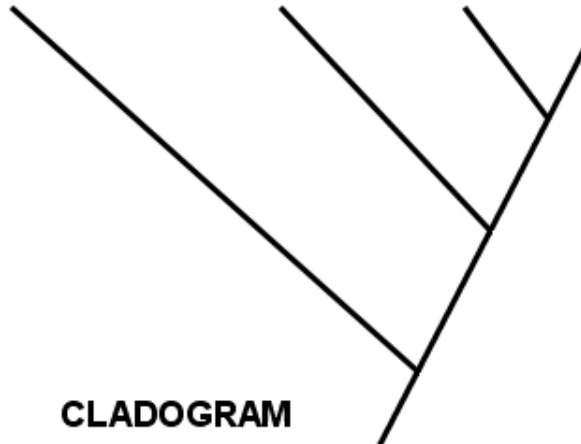
Convergent evolution/molecular clock

Adaptive radiation

Cladogram/ phylogenetic tree

### Book Diagrams and Charts:

- *Figure 22-6 Galapagos Finches*
- *Figure 22-8 Descent with Modification*
- *Figure 22-9 Artificial Selection*
- *Figure 22-10 Variation in a population*
- *Figure 22-13 Predation*
- *Figure 22-14 Evolution of drug resistance*
- *Figure 22-17 homologous structures*
- *Figure 22-19 Tree thinking*
- *Figure 22-20 Convergent evolution*



**Label the cladogram with the following organisms:**

Lamprey  
Shark  
Salmon  
Lizard

### Questions

1. What was Lamarck's premise?

2. What were Darwin's 4 main observations from the Galapagos?

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3. What were his two inferences that were the basis for his theory?

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4. What is the evidence supporting evolution?

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5. Give examples of homologous structures

- in animals
  
- in plants

6. What are analogous structures and give examples.

7. What is convergent evolution and give an example.

8. What are vestigial structures and give an example.

9. Why is comparative embryology evidence for evolution?

10. Why is comparing the molecular record evidence for evolution?